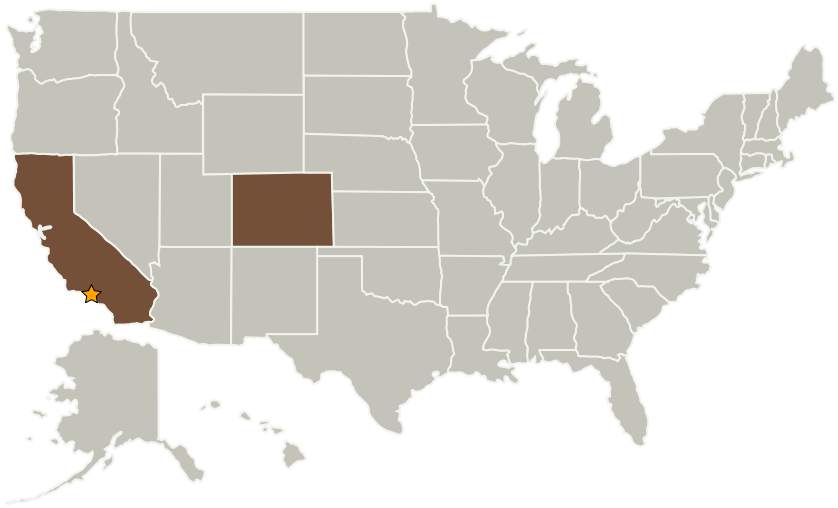
Lightweight Gearbox Technology, Phase II

Completed Technology Project (2005 - 2007)

Project Introduction

Starsys Research has developed a revolutionary new concept for a planetary gearbox that significantly improves the load capacity for any given volume. This concept is based on optimizing both the physical configuration and material selection. While yet to be proven, engineering estimates show load capacity improvements are between five and ten times other standard designs. This improvement in load capacity allow smaller gearboxes to be used for any particular application and thus reduce the system mass.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
SpaceDev, Inc.	Supporting Organization	Industry	Louisville, Colorado

Primary U.S. Work Locations	
California	Colorado

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.1 Cryogenic Systems
    - TX14.1.3 Thermal Conditioning for Sensors, Instruments, and High Efficiency Electric Motors